

CAGCGTCAGACGCAGGCACTGAGAATGTGCGACAGCGCGAACGATGAAGTAGCCCAGAGGGTCCCTTG
GAAAATGAGGCCAGGGTCCCTGCTGCTGCTGTTCTGCTGCTGCCCTGTCCAGGAGCCTGCGGGGCAA
GAGTGTGCGTCTCCACCCTGTGAGTGTACCAGGAGGACACTCAGAGTCACCTGCAAGGAGCTCCACC
GAATCCCCAGCCTGCCGCCAGCACCCAGACTCTGAAGCTCATCGAGACTCATCTGAAGACCATAACCCAG
TCTTGCAATTTCGAGTCTGCCAATATTCCAGGATCTATTATCTATAGATGCAACTCTGCAGCGGCTG
GAACCACATTCTTCTACAATTGAGTAAAATGACTCACATAGAAATCCGGAACACCAGAAGCTTAACCT
ATATAGACCTGATGCCTGACAGAGCTCCCTGCTCAAGTTCTGGCATTTCATAACTGGACTTAG
AATATTCCCTGACTTGACCAAAATTATTCCACGGACATATTCTTATACTTGAAATCACAGACAACCC
TACATGACTTCGGTCCCTGAAAACGCATTCCAGGGCCTATGCAATGAAACCTTGACCTGAAACTGTACA
ACAATGGATTACTTCAGTCCAAGGACATGCTTCAATGGAACAAAGCTGGATGCTGTTACCTAAACAA
GAATAAATACCTGACAGCTATAGACAACGATGCCTTGGAGGAGTATACAGTGGACCAACTTGCTAGAT
GTGTCTTCCACCAGCGTCACTGCCCTCCTCCAAAGGCCTGGAGCACCTCAAAGAACTGATCGCAAAAG
ACACCTGGACTCTCAAAAGCTCCCGCTGTCGTTGAGTTCCCTCACCTCACTCGGGCTGACCTCTTTA
CCCGAGCCACTGCTGCGTTTAAGAACCGAGAAGAAAATCAGGGGAATCCTGGAGTCTTGATGTGAAAT
GAGAGCAGTATCCGGAACCTCGTCAAAGGAAATCAGTGAACATCTTGAGGGTCCCACCTACCAAGGAAT
ATGAAGAAGATCCGGGTGACAACAGTGTGGGTACAAACAAAATCCAAGTTCCAGGAGAGCCAAAGCAA
CTCTCACTATTACGTCTTCTTGAAAGAACAAAGAGGATGAGGTCGTTGGCTCGGCCAGAGCTCAAAAT
CCTCAGGAAGAGACTCTCCAAGCCTCGAGAGCCACTATGACTACACGGTGTGGGACAACGAGGACA
TGGTGTGTACCCCCAAGTCGGACGAGTTAACCCCTGTGAAGATATCATGGGCTACAGGTTCTGAGAAT
CGTGGTGTGGTTGTCAGTCTGCTGGCTCTCCTGGCAATATCTCGCCTGCTCATTCTGCTAACCGAC
CACTACAAATTGACCGTGCGCGGTCTCATGTGCAACTTGGCCTTGCAGATTCTGCATGGGTAT
ACCTGCTTCTCATTGCCTCTGTAGACCTGTACACACACTCTGAGTACTACAACCACGCCATCGACTGGCA
GACGGGCCCTGGTGCAACACGGCTGGCTTCACTGTTGCCAGTGTGAGTTATCAGTGTACACACTG
ACGGTCATCACCCCTGGAGCGATGGTACGCCATCACCTCGCCATGCCCTGGATAGGAAGATCCGCTCA
GGCACCGTACACCACATGGCTGGGGCTGGGTTCTGCTTCTCGCCCTGCTCCGATGGTGG
AATCAGCAGCTATGCCAAGGTCAAGCATCTGCCATGGCAACTTGGCCTTGCAGATTCTGCATGGGTAT
ATTGTCCTCGTTGCTGCTCAATGTTGTTGCCTTGTGCTCTGCTATGTGAAGATCTACA
TCACGGTCCGAAATCCCCAGTACAACCCCTCGAGATAAAGACACCAAGATTGCCAAGAGGATGGCTGTGTT
GATCTTCACTGACTTCATGTGCACTGGCCCATCTCCTCTATGCGCTGTCGGACTTATGAACAAGCCT
CTAATCACTGTTACTAACTCCAAATCTGTTGGTTCTCTTCTACCCCTCAACTCCTGTGCCAATCCGT
TTCTCTATGCTATTTCACCAAGGCCTCCAGAGGACGTGTTCATCCTGCTCAGCAAGTTGGCATCTG
CAAACGCCAGGCCAGGCCTATCAGGGTCAGAGAGTCTGCTCCAACAAATAGCACTGGTATTCAAGATCCAA
AAGATTCCCCAGGACACGAGGACAGAGTCTCCCCAACATGCAAGATAACCTATGAACACTGCTGGAAACTCCC
AGCTAGCTCCAAAATGCAGGGACAAATCTCAGAAGAGTATAAGCAAACAGCCTGAAAGGAAAGGCTA
CGCTAGTCACAGTGAGACTTACAAAGGCTGGTTCTGAAACATGCGTTCCAGTCCCGTGACATGTGAAC
ACATAGGTTCATGCAGGTGATGATTCAAGGGTCAGAGTTCATCTCTAGAAAGTATTGCCTC (SEQ ID NO:1)

FIGURE 1A

MRPGSLLLLVLLLALSRSLRGKECASPPCECHQEDDFRVTCKELHRIPTSLPPSTQTLKLIETHLKTIPSLAFSSLPN
ISRIYLSIDATLQRLEPHSFYNLSKMTHIEIRNTRSLTYIDPDALTEPLLLKFLGIFNTGLRIFPDLTKIYSTDIFF
ILEITDNPYMTSVPENAFQGLCNETTLKLYNNNGFTSVQGHAFNGTKLDAYLNKNKYLTAIDNDAFGGVYSGPTLL
DVSSTSVTALPSKGLEHLKELIAKDTWTLKKLPLSLSFLHLTRADLSYPHCCAFKNQKKIRGILESLMCNESSIRN
LRQRKSVNILRGPIYQEYEEDPGDNSVGYKQNSKFQESPNSHYYVFFEEQEDEVVGFQELKNPQEETLQAFESHY
DYTVCGDNEDMVCTPKSDEFNPCEDIMGYRFLRIVVWFVSLLALLGNIFVLLILLTSHYKLTVPRLMCNLAFADFC
MGVYLLIASVDLYTHSEYYNHAIWQTGPGCNTAGFFTVAFAESELSVYTTLTVITLERWYAITFAMRLDRKIRLRHAY
TIMAGGWVSCFLLALLPMVGISSYAKVSICLPMDTDPLALAYIVLVLLNVAFVVVCSCYVKIYITVRNPQYNPR
DKDTKIAKRMAVLIFTDFMCMAPISFYALSALMNKPPLITVTNSKILLVLFYPLNSCANPFLYAIIFTKAFQRDVFILL
SKFGICKRQAQAYQGQRVCPPNSTGIQIQKIPQDTRQSLPNMQDTYELLGNSQLAPKLQGQISEEYKQTAL (SEQ
ID NO:2)

FIGURE 1B

underlined = deleted in targeting construct

[] = sequence flanking Neo insert in targeting construct

CAGCGTCAGACGCAGGGCACTGAGAATGTGCGACAGCGCGAACGATGAAGTAGCCCAG
AGGGTCCCTGGAAAATGAGGCCAGGGTCCC] TGCTGCTGCTTGTCTGCTCGCCCT
GTCCAGGAGCCTGCGGGCAAAGAGTGTGCGTCTCCACCCTGTGA [GTGTCACCAGGAGG
ACGACTTCAGAGTCACCTGCAAGGAGCTCCACCGAACCCCCAGCCTGCCGCCAGCACCC
AGACTCT] GAAGCTCATCGAGACTCATCTGAAGACCATACCCAGTCTGCATTTGAGT
CTGCCAATATTCCAGGATCTATTATCTATAGATGCAACTCTGCAGCGGCTGGAACCA
CATTCTTCTACAATTGAGTAAATGACTCACATAGAAATCCGGAACACCAGAACGCTTA
ACCTATATAGACCCTGATGCCTTGACAGAGCTCCCTGCTCAAGTTCTGGCATTTC
AATACTGGACTAGAATATTCCCTGACTTGACCAAAATTATTCCACGGACATATTCTT
ATACTTGAAATCACAGACAACCCTACATGACTCGGTCCCTGAAAACGCATTCCAGGGC
CTATGCAATGAAACCTTGACCCCTGAAACTGTACAACAATGGATTACTTCAGTCCAAGGA
CATGCTTCAATGGAACAAAGCTGGATGCTGTTACCTAAACAAGAATAAACCTGACA
GCTATAGACAACGATGCCTTGAGGAGTATACACTGGACCAACTTGCTAGATGTGTCT
TCCACCAGCGTCACTGCCCTTCCAAAGGCCTTGGAGCACCTCAAAGAAACTGATCGCA
AAAGACACCTGGACTCTCAAAAGCTCCGCTGCGTTTAAGAACCCAGAACGAAATCAGGGGA
ATCCTGGAGTCTTGATGTAATGAGAGCCAGTATCCGGAACCTCGTCAAAGGAAATCA
GTGAACATCTTGAGGGTCCCACTCTACCAGGAATATGAAGAACGATCCGGGTGACAACAGT
GTTGGGTACAAACAAAACTCCAAGTTCCAGGAGAGGCCAAGCAACTCTCACTATTACGTC
TTCTTGAAGAACAGAGGATGAGGTGTTGCTGGCAAGAGCTCAAACATCCTCAG
GAAGAGACTCTCAAGCCTCGAGAGCCACTATGACTACACGGTGTGTTGGACAACGAG
GACATGGTGTGACCCCCAAGTCGGACGAGTTAACCCCTGTGAAGATATCATGGCTAC
AGGTTCTGAGAATCGGGTGTGTTGTCAGTCTGCTGGCTCTGGCAATATCTTC
GTCCTGCTCATTCTGCTAACCCAGCCACTACAAATTGACCGTGCCCGGTTCTCATGTGC
AACTTGGCCTTGCAGATTTCTGCATGGGGTATAACCTGCTCTCATTCCTCTGTAGAC
CTGTACACACACTCTGAGTACTACAACCACGCCATCGACTGGCAGACGGCCCTGGGTGC
AACACGGCTGGCTTCTCACTGGTACACCACATGGCTGGGGCTGGTTCTGCTCCTCTGCCCTG
CTCCCGATGGGGAAATCAGCAGCTATGCCAAGGTCAAGCATCTGCCTGCCAATGGACACC
GACACCCCTTGCACTCGCATACATTGCTCGTCTGCTCAATGTTGTTGCC
GTTGTCGTCTGTTCTGCTATGTAAGAGATCTACATCACGGTCCGAAATCCCCAGTACAAC
CCTCGAGATAAAGAACCCAAGATTGCCAAGAGGATGGCTGTGTTGATCTCACTGACTTC
ATGTGCATGGGCCCCATCTCCTCTATGCGCTGCGCACTTATGAACAAGCCTCTAAC
ACTGTTACTAACTCCAAAATCTGTTGTTCTCTACCCCTCAACTCCTGTGCCAAT
CCGTTCTCATGCTATTTACCAAGGCCTCCAGAGGGACGTGTTCATCCTGCTCAGC
AAGTTGGCATCTGCAAAACGCCAGGCCAGGCCTATCAGGTCAGAGAGTCTGTCCCAAC
AATAGCACTGGTATTCAGATCCAAAAGATTCCCCAGGACACGAGGAGTCTCCCCAAC
ATGCAAGATAACCTATGAACTGCTGGAAACTCCCAGCTAGCTCCAAAACTGCAGGGACAA
ATCTCAGAAGAGTATAAGCAAACAGCCTGTAAGGAAAGGCTACGCTAGTCACAGTGAG
ACTTACAAAAGGCTGGTTCTGAAACATGCGTCCAGTCCCAGTACATGTGAACACATAG
GTTCATGCAGGTGATGATTCATAGGGTCAGAGTTCATCTAGAAAGTATTGCCTC

FIGURE 2A

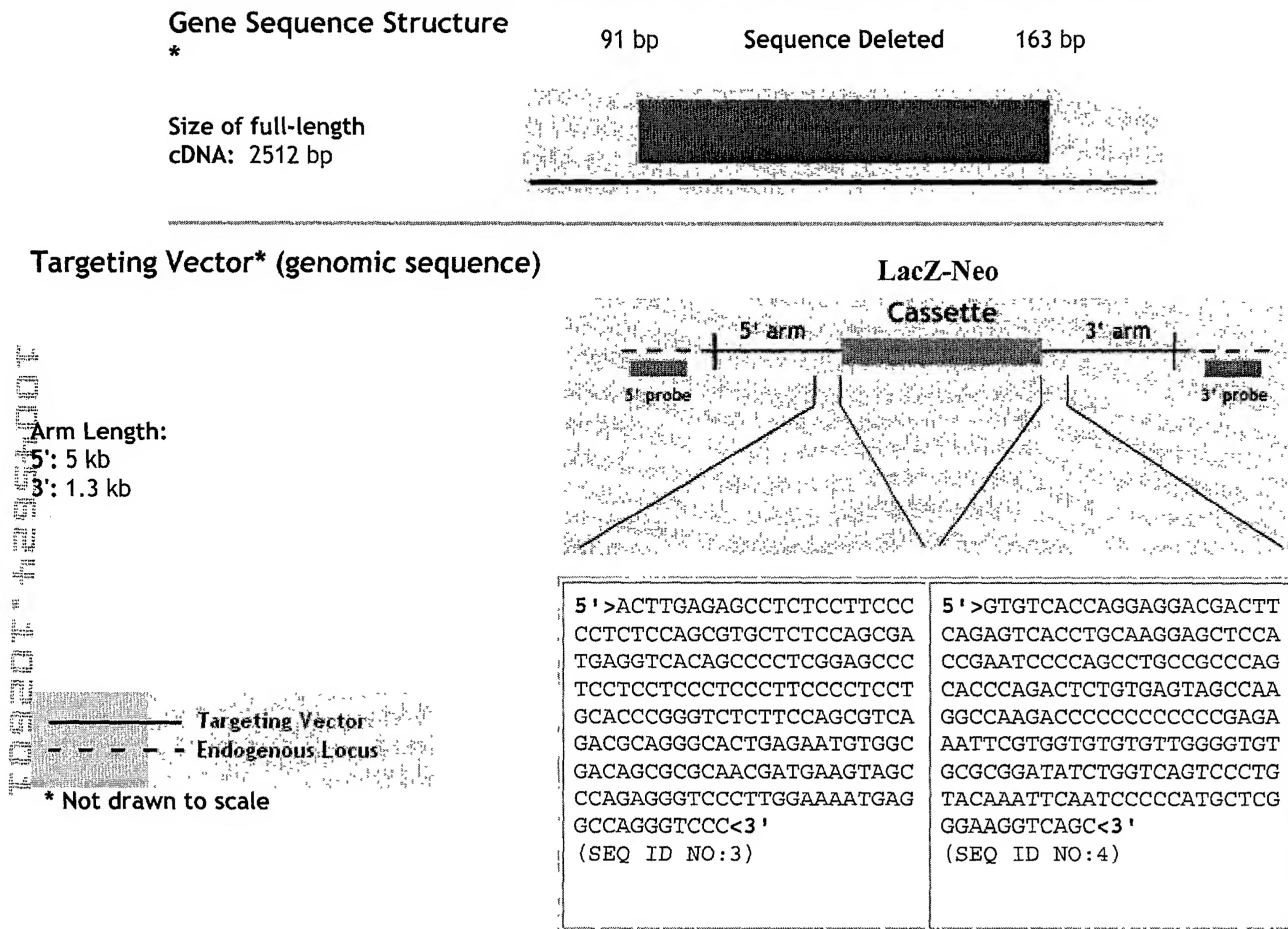


FIGURE 2B

Gender	Age (days)	Length (cm)	Body Weight (g)	Spleen/ Body			Liver/ Body			Kidney/ Body			Thymus/ Body			Heart/ Body			Testes + Epididymis Weight (g)		
				Spleen Weight (g)	Body Weight (g)	(%)	Liver Weight (g)	Body Weight (g)	(%)	Kidney Weight (g)	Body Weight (g)	(%)	Thymus Weight (g)	Body Weight (g)	(%)	Heart Weight (g)	Body Weight (g)	(%)	Heart Weight (g)	Body Weight (g)	(%)
+/+	Female	48	10	22.339	0.095	0.425	1.256	5.622	0.327	1.464	0.082	0.367	0.155	0.694							
+/+	Female	48	8.25	16.960	0.052	0.307	0.900	5.307	0.220	1.297	0.060	0.354	0.122	0.719							
+/+	Male	48	9.5	24.550	0.069	0.281	1.388	5.654	0.342	1.393	0.055	0.224	0.119	0.485	0.224						
+/+	Male	48	9.7	23.792	0.081	0.340	1.192	5.010	0.304	1.278	0.063	0.265	0.133	0.559	0.226						
-/+	Female	48	8.5	22.619	0.080	0.354	1.272	5.624	0.238	1.052	0.080	0.354	0.121	0.535							
-/+	Male	48	9	24.040	0.072	0.300	1.344	5.591	0.322	1.339	0.062	0.258	0.137	0.570	0.181						
-/-	Female	47	7.5	9.026	0.008	0.089	0.435	4.819	0.110	1.219	0.010	0.111	0.045	0.499							
-/-	Female	48	7	8.360	0.016	0.191	0.382	4.569	0.110	1.316	0.004	0.048	0.051	0.610							
-/-	Female	48	8	11.640	0.016	0.137	0.586	5.034	0.127	1.091	0.031	0.266	0.053	0.455							
-/-	Male	48	7.6	11.733	0.018	0.153	0.666	5.676	0.134	1.142	0.034	0.290	0.053	0.452	0.087						
-/-	Male	48	8	12.545	0.024	0.191	0.778	6.202	0.146	1.164	0.035	0.279	0.060	0.478	0.180						
-/-	Male	48	7	8.070	0.007	0.087	0.366	4.535	0.095	1.177	0.001	0.012	0.042	0.520	0.076						

FIGURE 3

Gender	Age at Test (days)	Length (cm)	Body Weight (g)	Spleen Weight (g)	Liver/Body Weight (%)	Kidney/Body Weight (%)	Thymus/Weight (%)		Testes + Epididymis Weight (g)	
							Thymus Weight (g)	Thymus Weight (%)	Heart Weight (g)	Body Weight (%)
+/+ Female	308	9.5	25.191	0.222	0.8813	1.476	5.8592	0.353	1.4013	0.039
+/+ Female	308	9.918	28.180	0.091	0.3229	1.447	5.1348	0.383	1.3591	0.043
+/+ Male	308	11.025	55.089	0.182	0.3304	3.267	5.9304	0.694	1.2598	0.074
+/+ Male	308	11	42.613	0.136	0.3192	2.144	5.0313	0.485	1.1382	0.052
-/- Female	307	7.978	19.561	0.030	0.1534	0.863	4.4118	0.184	0.9406	0.040
-/- Male	307	9.47	25.557	0.077	0.3013	1.394	5.4545	0.340	1.3304	0.025
-/- Male	307	9.5	25.263	0.051	0.2019	1.232	4.8767	0.296	1.1717	0.027

FIGURE 4